

THE AMES

Astrogram

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

AMES RESEARCH CENTER, MOFFETT FIELD

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on-line at: <http://amesnews.arc.nasa.gov>



Ames scientists help explain ozone depletion

Newly discovered large particles that contain nitric acid are helping scientists better explain the process of ozone loss in the Arctic's stratosphere six to 30 miles above Earth.

An international team of 27 scientists published its findings about the new class

tic stratosphere. Scientists have observed unusually low levels of ozone over the Arctic during recent winters.

Icy, nitric acid-containing 'polar stratospheric cloud' (PSC) particles are formed in the polar regions during winter, where they enhance the destruction of ozone

extent of denitrification observed in the polar stratosphere could not be accounted for by the smaller (and slower-to-sediment) PSCs.

Scientists made their observations in the Arctic stratosphere from January-March 2000. Instruments onboard a NASA ER-2 high-altitude research aircraft measured reactive nitrogen species as the vehicle traveled toward the North Pole and deep into the region of highest ozone loss.

The large-sized PSCs observed in some of the air samples contained 15 percent to 20 percent of the available reactive nitrogen in the Arctic stratosphere, and were falling at a rate of 1-2 kilometers per day. These values demonstrate the potential for significant denitrification by the large particles, according to the science team. The 2000 Arctic winter stratosphere was extensively denitrified, which set the stage for significant chlorine- and bromine-caused ozone loss in the winter and spring.

Cold temperatures promote the growth of large PSCs, enhancing the loss of ozone by chlorine and bromine. Unusually cold winters, or climate shifts that reduce stratospheric temperatures or alter the amount of water vapor in the stratosphere, could prolong chemical ozone loss in the Arctic. This can occur even as chlorine levels fall in response to international curtailment in the use of ozone-depleting chemicals. "Our findings suggest that we need to learn more about how these large PSCs are formed, so that we'll have a better understanding of how the ozone layer will recover in the future," Fahey said.

"Cooling of the stratosphere will likely increase ozone loss during Arctic winters in coming decades, even as chlorine and bromine levels decrease as a result of the "Montreal Protocol," according to scientists. The buildup of greenhouse gases, such as carbon dioxide, tends to trap more heat near the Earth's surface, while at the same time colder than normal temperatures are experienced above, in the stratosphere, where ozone breakdown occurs," researchers said.

The ER-2 science flights took place as part of two international field experiments: NASA's SAGE III Ozone Loss and Validation Experiment (SOLVE) and the European Commission-sponsored Third European Stratospheric Experiment on Ozone.

BY JOHN BLUCK



Above photo shows an excellent example of a polar stratospheric cloud in the Arctic. Ames researchers have found evidence indicating that such clouds are now implicated in regional ozone depletion.

of particles in the current issue of Science magazine. The Earth's ozone layer protects life below from harmful ultraviolet radiation coming from the sun that can lead to the formation of skin cancers.

"The size of these particles was surprisingly big and they are part of a process that is removing nitric acid from the stratosphere, eventually leading to ozone loss," said Hansjurg Jost, co-author of the Science article and a scientist at Ames. The lead author of the paper is David W. Fahey of the National Oceanic and Atmospheric Administration (NOAA), Boulder, CO.

"Ames teams contributed to these findings with crucial, high-precision measurements of trace gases and temperature," said co-author Thaopaul Bui of Ames.

The newly discovered class of particles has given scientists a better understanding of the processes that 'set the stage' for chlorine-caused ozone depletion in the Arc-

caused by human emissions of chlorine and bromine. Fahey, a scientist at NOAA's aeronomy laboratory, and colleagues, reported the discovery of a new population of very large PSCs. They have diameters of 10-20 microns (millionths of a meter), which is about 10-20 times larger than typically observed PSC diameters.

These particles have eluded detection to date because of their large size and very small abundance in the atmosphere, scientists said. The PSCs are laden with nitric acid and serve as reservoirs for nitrogen in the polar stratosphere. As the particles sediment, or fall out of the atmosphere, the stratosphere becomes "denitrified."

The loss of nitrogen has consequences for ozone, because ozone-destroying forms of chlorine and bromine are longer-lived in a denitrified stratosphere. The discovery of this new class of large PSC particles helps to explain a long-standing mystery that the

Call for abstracts on finite element modeling

The second "Innovative FEM Solutions to Challenging Problems" workshop is scheduled for May 16 to 17 at NASA GSFC, in Greenbelt, MD. Abstracts are now being accepted. The workshop will be hosted by the Finite Element Modeling Continuous Improvement (FEMCI) group of Goddard's mechanical systems analysis and simulation branch. The format of the workshop will include both formal podium presentations and an informal poster session.

Prospective presenters are encouraged to submit abstracts for presentations and/or posters that address topics in finite element modeling and analysis that are new, innovative or differ from established techniques. Specify your preference of podium presentation, poster session or either. Brief abstracts (limited to one page including figures) should be submitted electronically to John Johnston. Details regarding the submission of abstracts can be found at the workshop web site.

Interested parties can add their e-mail address to the workshop announcement list that will provide important updates on the workshop, such as when the online registration becomes available. You can join the list either online at: <http://femci.gsfc.nasa.gov/workshop/announce.html> or by sending an e-mail message with your name in the message body and with no subject to: joinworkshop2001@femci.gsfc.nasa.gov.

The call for abstracts document is available in PDF format at: http://femci.gsfc.nasa.gov/workshop/2001/FEMCI2001-Call_for_Abstracts.pdf

VPP STAR Tip:

"A basic tenet of VPP is that, at the worksites with the best safety and health protection - those worthy of VPP recognition - management and employees work cooperatively to ensure a safe and healthful worksite"

...Federal Register 65:45649-45663

SAFETY SNAPSHOTS



This feature is one in a series intended to inform the Ames community about facets of Ames' Safety and Environmental programs.

Lifting Equipment

PROFILE

Moving heavy equipment, personnel and/or materials is a task that is performed daily at Ames. Yet each time an item is raised or lifted into a tunnel test section, the potential for a loss of life or equipment damage is ever present. Some of Ames' most serious mishaps have involved lifting equipment. How do we ensure that these events are not repeated? The answer is found in training and careful planning before using any lifting equipment.

CLOSEUP

John Goldbach, an instructor for Ames' overhead crane and personal aerial lifting devices (manlift) safety classes, says that lifting equipment can't be operated casually, regardless of the operator's experience. The potential risks of injury, loss of life, equipment damage and mission failure are just too great.

The lifting device program at Ames has three main elements. These involve yearly inspections and certification of cranes and hoisting equipment, operator training and daily inspection of the equipment prior to use. Crane operators need to attend an initial crane and rigging training class and refresher training once a year thereafter. The initial training class consists of formal classroom instruction with a qualified crane inspector/trainer and hands-on evaluation of the skills learned in the classroom setting.

Every year, mobile-crane contractors work on various projects at Ames, including critical lifts. Critical lifts are those that have the potential to cause loss of life, severe injury or major property damage. All lifts present their own unique potential risk to Ames employees. In August of 1996, a lift failed, causing a heating, ventilation and air conditioning (HVAC) unit to come crashing down onto the roof of N233A, seriously injuring the crane operator as he jumped from the tipping crane. In addition to the damage to the roof and the injuries sustained by the crane operator, there were employees working inside the building during the lift. They were lucky because the HVAC unit dropped 20 to 30 feet away from where they were sitting, resulting in no injuries to personnel. Due to the potential for accidents, Ames has a policy that employees will be relocated when lifts occur above the areas of their buildings.

For more information about lifting devices and equipment, go to the Ames health and safety manual, AHB 1700.1 Chapter 17 on the web at: <http://q.arc.nasa.gov>, or contact Tami Williams at the safety and environmental training department at ext. 4-2056, to enroll in an overhead crane class.

"California electrical emergency" and Ames' energy web page

California continues to experience a situation of incredibly tight energy markets. It's been a month of extreme electrical shortages.

Ames has a web page providing links to a range of energy-related materials. For further details, check out the web site at: <http://code.arc.nasa.gov/jf/energy/>

All Ames employees are strongly encouraged to continue their conservation efforts.

If you have any questions, call Steve Frankel of Plant Engineering at ext. 4-4214 or George Sutton of Electric Power Office at ext. 4-0185.

H. Julian Allen Award nominations being accepted

The H. Julian Allen Award was established in 1969 to annually recognize a scientific or engineering paper of outstanding technical merit and significance. The qualifications are: (1) the senior author must be an Ames civil service employee, NRC postdoctoral fellow or resident Ames staff member; (2) the majority of the work must have been undertaken at Ames; (3) the research paper must be in the scientific literature for sufficient time (at least two to three years) to have measurable impact; and (4) the paper must have passed through peer review.

Nominations must be written by someone other than the authors and should be routed through the author's division office. Each paper must be accompanied by a succinct nomination memorandum that includes the following information: a) statement of importance of problem; b) degree to which the paper contributes to solving the problem; c) description of key innovative contributions of the paper; d) impact of

paper on general field of research; e) degree of contributions by each author; and f) supporting background material.

In addition, the nominator should arrange for two supporting letters from outside Ames assessing the impact of the work on the field. The letters should be mailed directly to Dr. Stephanie Langhoff, chairperson, Ames Basic Research Council, mail stop 230-3, NASA Ames Research Center, Moffett Field, CA 94035.

To be considered for the 2000 H. Julian Allen Award, 12 copies of the nominated paper and supporting documents must be submitted by March 30, 2001.

A \$5,000 honorarium will be shared by the winning authors. A lecture will be given at Ames by the winning author(s).

The H. Julian Allen award is one of Ames' highest honors. Previous winners are recognized on the Ames Basic Research Council web site at: http://george.arc.nasa.gov/abrc/09_hjapw.html

A model of space pride



Cuccarollo Raffaele, a 51-year-old resident of Italy, recently sent this photo to the Astrogram of a model of the space shuttle (in ascent mode with booster and external tank attached). Raffaele fashioned the model by hand out of hardwoods to show his support for NASA's space research and his "astronautic passion."

Machine-aided indexing available

With NASA's ever-increasing volume of information comes a greater need for tools to help analyze, classify and manage that information. On Jan. 8, NASA's Center for Aerospace Information (CASI) released a

veloped by CASI in cooperation with the Langley Research Center, gives authors and others a convenient, fully-interactive tool for identifying keywords and terms.

At the heart of the MAI application is a

The new tool also incorporates a fully searchable and browsable form of the NASA thesaurus hierarchies and definitions included.

Questions or comments concerning



new web-based interactive tool, machine-aided indexing (MAI), for analyzing and indexing the subject content of technical documents. It is available for use by the extended NASA community. The MAI tool is available to all NASA users hailing from a 'NASA.gov' domain. The application can be accessed directly at url: <http://www.sti.nasa.gov/nasaonly/webmai>, or through the NASA STI homepage (<http://www.sti.nasa.gov/>).

The new web-based application, de-

language processor that can accept any user-supplied text as input, including abstracts, full-text documents or webpages. Within seconds the text is analyzed and a ranked listing of subject terms results. The 18,000 terms of NASA's thesaurus serve as the foundation for the extensive knowledge base used by MAI. Using this established vocabulary, MAI provides valuable assistance in assuring that technical documents and other data are uniformly and consistently accessible.

the NASA MAI tool can be directed to Michael Genuardi at e-mail: mgenuardi@sti.nasa.gov or call him at: (301) 621-0114.

Recognition & Awards

Ames' Vernol Battiste is "Black Engineer of the Year"

Career Communications Group, Inc. (CCG), the publisher of US Black Engineer & Information Technology magazine, was founded 20 years ago with a unique mission--to promote significant minority achievement in engineering, science and technology. As a minority-owned media services company, CCG recognizes the mandate to promote excellence to African-American youth by telling the stories of the thousands of unheralded members of minority groups who are striving for success in these fields. Through inspiring magazines, award-winning syndicated television programs and annual national conferences, CCG reaches thousands of African-American students and professionals each year.

CCG's most notable conference is the Black Engineer of the Year awards conference. For the past 15 years, the conference has attracted top professionals and students from every part of the nation and every field of technology—from Internet development to genetics research, and from telecommunications to virtual reality.

This year the CCG has awarded Ames' research psychologist, Vernol Battiste, the Black Engineer of the Year award for outstanding technical contribution in government. The outstanding technical contribution award is based upon a set of stringent criteria.

Nominees are limited to those performing technological functions who have designed, developed, managed or assisted in the development of a product, service, system or intellectual property that is a substantial achievement in the field. The overall impact of the nominee's technological achievement is the prime consideration, regardless of title or degree. The committee is looking for broad impact, and high value to society as a whole. Nominees are considered separately for outstanding technical contribution in government and industry.

The nomination package must address: 1) the uniqueness of the development; 2) the innovation of the development; 3) the uniqueness of the design; and 4) the social and/or economic value of the development.

As part of the Human Factors Research and Technology division at Ames, Battiste works to make our airspace system safer and more efficient. He is an industry leader in the critically important field of human factors and has focused his research on human-centered automation in aviation operations. The advent of new technologies, including the global positioning system (GPS) and aeronautical data link, have the potential to revolutionize commercial flying. They can enable huge leaps forward in airspace safety and capacity, if we can solve the human factors issues surrounding their introduction. Battiste provides an essential link between NASA's research in aircraft

self-separation (referred to as CDTI, cockpit display of traffic information and ADS-B,



Vernol Battiste

(automatic dependent surveillance-broadcast) and the operational community that will enable this to happen.

Over his 17-year career at the center, Battiste has supported Ames research in many ways. He has been involved in the development of new laboratory capability for evaluating research concepts in aircraft

self-separation. With his team of engineers and researchers, he has developed and flight tested one of the first CDTI/ADS-B systems in support of a BLM/US Forest Service aerial fire fighting project. He is currently co-PI with Dr. Walter Johnson on the research and development of cockpit situation displays in support of free-flight operations.

Battiste is considered a major resource for technical consulting and mentoring within the human factors division. He has authored or co-authored a number of peer-reviewed papers and 21 reports and other publications in his field. He has won many awards for his accomplishments, including the prestigious and coveted NASA Exceptional Achievement Medal in 1993. His work continues to be at the critical cutting edge, reshaping the way aviators receive and use vital information about air traffic and air safety.

Presentation of the award was made at the 2001 Black Engineer of the Year awards conference held in Baltimore, MD, Feb. 8 - 10. The theme of this year's conference was "Heritage by Chance; Success by Choice!" The event was co-sponsored by the Lockheed Martin Corporation, the Council of Engineering Deans of the Historical Black Colleges and Universities, and USBE and Information Technology magazine.

BY NOLIE JOHNSON



Third annual Contact-NASA Ames day: The Extraterrestrial Imperative

The 2001 Contact-NASA Ames day will be held March 2 at Ames, in Building 3, Moffett Training and Conference Center. It will begin at 8:45 a.m. This year's topic is "The Extraterrestrial Imperative." Speakers and topics will include:

- Jim Funaro - "Biological and Cultural Drivers for Space Migration: The Dancer and the Dance"
- Marsha Freeman - "The Extraterrestrial Imperative: Why Man Must Explore"
- Ben Finney - "Talking Exploration with Space Cadets at the International Space University"

- Don Scott - "From Montana to Mars"

- Al Harrison - "Cosmic Beliefs: Science, Imagination and Life Beyond Earth"

- Ted Peters - "Theological Reflections on Extraterrestrial Life"

Tours of FutureFlight Central, the Moffett Field History Museum and the Computer Museum will be available. All Ames personnel are welcome.

For additional information about the event, contact Michael Sims at ext. 4-4757, msims@mail.arc.nasa.gov.

Ames upgrades network infrastructure

Ames has undertaken the upgrade of its network infrastructure. This project is being done to better support the center's programs and projects. A significant improvement is the integration of IT security into the design of the network and the purchase of new electronics and fiber that allow us to bring higher throughput to our user community.

This project consists of migrating from a single local area network (LAN) environment to three separate LAN environments (private, public and open) providing increased levels of security that can be delivered to the wall plate in an office or lab.

The project involves a fundamental change in our way of doing business as it addresses security in the design and architecture of the LAN. A major milestone in the upgrade project has already been achieved with the installation of the core cable plant, three core hubs and the external interface.



photo by Tom Trower

From left to right: Maryland Edwards, Code JT upgrade project deputy task manager; Ed Murphy, foundry networks systems engineer; Bohdan Cmaylo, Code JT upgrade project task manager; Scott Santiago, division chief, Code JT; Greg Milller, Raytheon Network engineer and Frank Daras, Raytheon network engineering manager.

Rita Colwell speaks at recent director's colloquium

Dr. Rita Colwell, director of the National Science Foundation, presented a Director's Colloquium at Ames on Feb. 13. The title of her presentation was "Climate and Health: Monitoring Cholera Epidemics by Satellite." Colwell has been the director of the National Science Foundation since 1998.

Since taking office, Colwell has spearheaded the NSF's emphasis on K-12 science and mathematics education, graduate science and engineering education/training and the increased participation of women and minorities in science and engineering.

Her policy approach has enabled the NSF to strengthen its core activities, while establishing support for major initiatives, including nanotechnology, biocomplexity, information technology and the 21st century workforce. In her capacity as NSF director, Colwell serves as co-chair of the Committee on Science of the National Science and Technology Council.



photo by Dominic Hart

Dr. Rita Colwell, director of the National Science Foundation, speaks at a recent Ames director's colloquium on "Climate and Health: Monitoring Cholera Epidemics by Satellite."

Ames hosts rotorcraft-industry technology fest

The "rotorheads" were all spun up at Ames. Two hundred rotorcraft technologists and managers met in a major technology-transfer event hosted at Ames from Feb. 20 - 22. Approximately half of those attending came from industry; 14 came from academia and the rest were members of NASA, the U.S. Army, the U.S. Navy and the FAA.

Participants in the Rotorcraft Industry Technology Association (RITA) reported on a series of 122 projects executed by RITA members. RITA constitutes the industry side of the industry-government partnership represented at Ames by the National Rotorcraft Technology Center (NRTC--see front-page article on Hammer Award in Jan. 29 "Astrogram"). In this arrangement, industry proposes projects and provides 50 percent of the funding; government influ-

ences and then selects projects for execution by RITA.

Side meetings of small teams addressed specific topics, such as interior-noise reduction, crashworthy structures and computer/web-based design of rotorcraft. These meetings focused on the specifics of plans and results to date. The steady stream of project reports at the larger meetings allowed all RITA-NRTC members to learn of accomplishments to date and opportunities for further technology transfer.

These RITA tasks constitute a significant part of the work supported by the NASA Rotorcraft Base R&T program and by the U.S. Army Aviation and Missile Command, already known as strong partners in rotorcraft work at Ames.

The three-day event, hosted for the first time at Ames, covered the diverse range of

RTIA-NRTC topics--such as aeromechanics, structures, crew-systems and total vehicle design. While the tightly-timed reviews proceeded at a nearly mind-numbing pace, those looking for information and networking opportunities were not disappointed.

By CHARLES MORRIS

Quest connects students

NASA Quest continues to connect students with the NASA mission via webcasts, webchats and on-line forums. In upcoming events, Ames engineers Estela Hernandez and Karen Gundy-Burlet will join engineers at Johnson Space Center and Kennedy Space Center for "Introduce a Girl to Engineering." In addition, Space Team On-Line will host a diverse line-up of NASA projects and people.

For more information and event schedules, visit the Quest web site at: www.quest.arc.nasa.gov.

Mars landing site archive now online

An extensive archive of Mars data is now available online to assist in the selection of landing sites for the Mars Explorer Rover (MER) twin rover missions scheduled for

frequently in workshop participants' talks," according to Deardorff. "The web site was well received and is being very actively used," he said. NASA Mars Exploration pro-



launch in 2003. This interactive web site, called the Marsoweb, is at: <http://marsoweb.nas.nasa.gov/landingsites/> and is maintained and upgraded by Numerical Aerospace Simulation division senior research and development engineer Glenn Deardorff.

The site has been officially certified by the Mars research community as a means of communicating during the site selection process. The pages contain data from both the current Mars Global Surveyor (MGS) and previous Viking missions.

The landing site section of the Marsoweb for the 2003 missions was developed, in part, for a Mars landing site workshop held at Ames Jan. 24 - 26.

"Graphics from the Mars site were used

gram scientist Jim Garvin found work on the landing site web pages "exemplary."

The new landing-site section enables researchers to navigate landing sites within the equatorial landing zone of Mars using Java-based image maps generated from geology maps, elevation data, high-resolution MGS images and a number of other datasets. Much of the data available on the site was presented to the Mars research community for the first time at the January workshop. Deardorff has plans to incorporate datasets for the entire surface of Mars in the future.

For more information, contact Glenn Deardorff at e-mail: deardorff@nas.nasa.gov, or call him at ext. 4-3169.

By HOLLY A. AMUNDSON

Botball mentors needed

Volunteer mentors are needed to support high school teams that are entering the 4th annual Silicon Valley "Botball" tournament. "Botball" mentors will help students develop their own robots for competition, hopefully stimulating new interest in science and technology, a major element of NASA's strategic vision.

Mentors will receive robotics training, and an introduction to C coding using an easy, interactive test environment. They can help teachers get in-service training and the schools get new robotics equipment. Mentors will be key participants in a "hands-on" experience. They will see how high school students learn electrical and mechanical design, computer programming, web building and teamwork skills. The kickoff tutorial is set for March 16 - 18. The tournament will take place on April 28.

A good introduction to the contest is provided on the internet at: <http://www.kipr.org/botball>. More information can be obtained locally at: <http://robotics.nasa.gov> and clicking on 'Events' & 'Botball'. For more information, contact Terry Grant at ext. 4-4200.

Calendar & Classifieds

Event Calendar

Model HO/HOn3 Railroad Train Club at Moffett

Field invites train buffs to visit & join the club in Bldg. 126, across from the south end of Hangar One. Work nights are usually on Friday nights from 7:30 p.m. to 9:30 p.m. Play time is Sunday from 2 p.m. to 4 p.m. For more info, call John Donovan at (408) 735-4954 (W) or (408) 281-2899 (H).

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung at ext. 4-2875 or Lich Tran at ext. 4-5997.

Ames Bowling League, Tuesdays, at 6 p.m. at Palo Alto Bowl. Bowlers needed. POC: Mina Cappuccio at ext. 4-1313 or Carmen Park at ext. 4-1215.

Ames Ballroom Dance Club. Tuesdays: Rumba 1/30, 2/6, 2/13, Bolero 2/20, 2/27, 3/6, Salsa 3/13, 3/20, 3/27. 3 levels of classes, from Beg. to Int., 5:15 p.m. - 6:45 p.m. Classes in building 944, the Recreation Center. Women dancers are especially encouraged to join. POC: Helen Hwang at: hwang@dm1.arc.nasa.gov.

Ames Diabetics (AAD), meet twice a month on first & third Wednesdays, 12 noon to 1 p.m., in the Ames Café, far corner of Sun room. Peer support group that discusses news that affects diabetics, both type I and II & exchange experiences in treatment & control & help each other best cope with the disease. No cost, sales people, leader or medical professionals. Attend a meeting or call Bob Mohlenhoff at ext. 4-2523, or email him at bmohlenhoff@mail.arc.nasa.gov.

Ames Child Care Center Board of Directors Mtg, Every other Thursday (check website for meeting dates: <http://acc.arc.nasa.gov>), 12 noon to 2:00 p.m., N269, rm. 201. POC: Katharine Lee, ext 4-5051.

Native American Advisory Committee mtg, Feb 27, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

Environmental, Health and Safety Monthly Information Forum, Mar 1, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1040. POC: Linda Vrabel at ext. 4-0924.

Hispanic Advisory Committee for Employees, Mar 1, 11:45 a.m. to 12:30 p.m., N-241/Rm 237. POC: Mary R. Valdez, at ext. 4-5819.

Nat'l Association of Retired Federal Employees, (NARFE), San Jose Chapter #50, Mtg, Mar 2, at Hometown Buffet, Westgate Mall, 4735 Hamilton Av, San Jose. Prog. & bus. mtg. at 9 a.m., followed by lunch, \$6.27, in a reserved area. Program starts at 9:30 a.m. followed by lunch. POC: Mr. Rod Perry (650) 967-9418 or NARFE 1-800-627-3394.

Ames Contractor Council Mtg, Mar 7, 11 a.m., N-200 Comm. Rm. POC: David Lawrence at ext. 4-6434.

Ames Asian American Pacific Islander Advisory Group Mtg, Mar 15, 11:30 a.m. to 1 p.m., N-237/Rm. 101. POC: Daryl Wong, ext. 4-6889 or Margaret Salas, ext. 4-6755.

Ames Amateur Radio Club, Mar 15, 12 noon, T28-N (across from N-255). POC: Michael Wright, KG6BKF, at ext. 4-6262. URL: <http://hamradio.arc.nasa.gov>

NFFE Local 997 Union General Mtg, Mar 21, noon to 1 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

Ames Classifieds

Ads for the next issue should be sent to astrogram@mail.arc.nasa.gov by the Monday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost & found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

Housing

3 bd/1.5 ba, 2-story townhouse on Luz Avenue, San José. Freshly painted inside, dishwasher, gas heat, w/w carpeting, outside child play area/large patio. 1 car port. Easy access to H101/680/280. \$295K. Azucena Guzman (408) 559-2881.

NRC senior research associate & spouse seek a furnished 2 bdrm apartment or house, Feb 1 to end July 2001. Interested in buying/leasing a cheap, used car for this period. Contact Sophie Wuergler, email to: s.m.wuergler@keele.ac.uk or by phone (+44 1782 752299 or +44 1782 584214) or by fax (+44 1782 583055).

One mile to NASA - 3 bd/1 ba home for rent in Mountain View. Detached garage w/laundry rm, 3 car driveway, front and rear yard, close to H101 and Hwy 85, walking distance to Cal Tran, light rail, shopping and downtown. Nice neighborhood across from city park. Available 4/1. Will show by appt only. \$2,000/mo. First, last & security dep required. No pets, N/S preferred. Call (209) 545-1984 lv msg. or email ssanchez@rational.com.

Big house available July 29 through August 20. In Campbell, about 30 mins from Ames, 3 bd/2 ba. Suitable for visiting family. Asking \$700/wk, 2-wk minimum. (408) 866-1285 or (408) 866-6412.

Transportation

'86 Jeep Wagoneer Limited, 4X4, loaded, good 2.8 V6 engine, tires under warranty. \$2500/bo, call Peter at 650-941-7957 after 6:00 pm.

'86 Hona CX at \$950. Call (650) 965-8655.

'96 Chevy Blazer Lt, Silver, all power, A.T., leather interior, loaded with ~\$9K mls for only \$15,000. Bob DeMann (510) 582-6056.

Miscellaneous

A Toy Fox Terrier free to loving home. Neutered male less than 3 years. Debra (650) 952-4439.

Anyone interested in forming a team to do the Avon Breast Cancer 3-day walk in July? It's 60 miles from San José to San Francisco. www.breastcancer3day.org for details. Ann (408) 248-1985.

Snow tire chains plus case \$5; new (never used) spare tire P155/80R13 plus rim \$10. Call (510) 471-9384.

Found near CU. Sgl. earring. Call & ID, ext. 44663.

Wanted: wooden bunk bed with mattresses, with full-size bottom bunk. Email: copernicus7@hotmail.com

Medium Vari-Kennel Deluxe for dog up to 35 pounds; navy, used only twice. \$40 new, asking \$30 or B/O. Call (408) 248-1985.

Free: used "Speed Queen" electric clothes dryer. Heating element and motors all work, but needs new belt. You pick up. James (408) 241-1052.

Wanted: Docking for classy 48' X 12' powered steel houseboat in Sausalito, San Francisco or Oakland areas with limited live aboard privileges. Quiet professional couple. Excellent personal and credit references. Generous finder's reward. Can assist with construction/wiring/plumbing. Call (650) 604-1922.

Queen size waterbed includes dresser drawers below and headboard with shelves. Made of pine, stained dark brown. Waterbed has baffles to reduce motion. \$125. Bruce (831) 458-5247.

Kenmore upright freezer, 16 cu. ft. Works fine. \$110. Call (408) 248-1985.

Moving sale: black sofa and center piece and coffee table, lamp plus more. Call (650) 965-8655.

Moving overseas: Fedders air-conditioner (in-window) 10,000, 120 volts (no special wiring), \$275; Sears Kenmore refrigerator-freezer, 20.6 cu. ft., automatic icemaker and defrost, \$375; Sears Knmr washer, \$195; Sears Knmr dryer (electric), \$195; multi-system TV, Panasonic 26, TC-2671 NPSR (PAL/SECAM/NTSC for record/play of foreign tapes), \$295; multi-system VCR, Panasonic, NV-G15PX, (PAL/SECAM/NTSC for record/play of foreign tapes), \$275; TV, Panasonic 20, CT 20G23, NTSC only (American standard), \$225; VCR, Panasonic, PV8415, NTSC only (American standard), \$125; microwave, Panasonic, NNS509P, 600 watts, \$95; yard shed, EZ Locker 83, metal (3'x 8'x6' floor), \$175. Call (650) 969-3660. Lv msg.

Lost & Found

Moffett Field Lost and Found may be reached at ext. 4-5416 at any time. Residents and employees at Ames may also use Internet browser at: <http://ccf.arc.nasa.gov/codejp/pages/lostFound.html> to view a list of found property and obtain specific instructions for reporting lost or found property and how to recover found property. Call Moffett Field security police investigations section at ext. 4-1359 or email at: mfine@mail.arc.nasa.gov.

Carpools

Carpool wanted from Solano county (Fairfield/Benicia), to Ames. Willing to pick up riders enroute along H680. Days of week & times negotiable. Crystal ext.4-6704 or email at: cwillingham@mail.arc.nasa.gov

Seeking those who would like to carpool from Sunset area of San Francisco. Contact David at ext 4-1120 or email dlambert@mail.arc.nasa.gov

Carpool wanted from Newark Area to Ames. Hours Flexible. Call Brent Beutter at ext. 4-5150 email: bbeutter@mail.arc.nasa.gov

U.C./Fremont/Newark Carpool: Existing 3 person carpool would like to add 4th. Take turns driving from park & ride lot at Ardenwood & 84. Meet at 6am and leave Ames 3:30 or 4:00 pm. Flexible with days person drives. Melissa ext. 4-3654 or mmallis@mail.arc.nasa.gov.

Ames public radio

1700 KHz AM radio -- information announcements & emergency instructions, when appropriate, for Ames employees.

Exchange Information

Information regarding products, services and opportunities provided as a service to the employee and contractor community by the Ames Exchange Council.

Beyond Galileo (8 a.m. to 2 p.m.)

Stop by and see our new gift shop. New items arriving everyday. Sundries on hand for those at work emergencies i.e. Aspirin, cough medicine etc..

Café Specials (6 a.m. to 2 p.m.)

Wednesday: Weekly Tostada special

Visitor Center Shop (8 a.m. to 4 p.m.)

NASA logo merchandise, souvenirs, toys, gifts and educational items.

Tickets and Tours

Now open 8 a.m. to 2 p.m. in Beyond Galileo gift shop for transit and entertainment tickets. Tickets are now available for Disneyland and the new California Adventure Park. Call for info and prices at ext. 4-6873.

Youth Activities

Babe Ruth baseball signups, ages 13 to 18, at McKelvey Ballpark, one-half block west of El Camino on Miramonte in Mountain View. Feb 28, 6pm to 8pm. Bring birth certificate or military ID for proof of age. Call (650) 966-8027.

Vacation Opportunities

Lake Tahoe-Squaw Valley Townshw, 3bd/2ba, View of slopes, close to lifts. Wkend \$490, midwk \$180 nite. Includes linens, firewood. Call (650) 968-4155 or email DBMcKellar@aol.com

South Lake Tahoe cottage with wood fireplace and hot tub. Rates from \$50 to \$130 per night. Call (650) 967-7659 or (650) 704-7732.

Engineers inspire student interest

2001 marks the 50th anniversary of National Engineers Week and Ames is continuing its tradition of involvement. The center sends engineers to speak to school students about engineering, conducts web



chats and on-line forums on engineering for students and teachers, and contributes to a local science and technology conference for high school students.

The component of National Engineers Week that encourages engineers to visit local classrooms is called Discover"E." Through the Discover"E" program, students are exposed to the exciting world of engineering and technology. The goal is to relate practical applications of math, science and engineering to the world in which students live. Speakers visiting classrooms are provided National Engineers Week educational materials and special NASA book-marks. In the South Bay area, Discover"E" is coordinated by the Silicon Valley Engineering Council. To register, go to www.svec.org. For National Engineers Week education packets, contact Sonia Capristo at ext. 4-6270. For more information, contact Tom Clausen, at ext. 4-5544.

Science judges needed

On Saturday, March 17, the 44th annual Synopsis Silicon Valley Science and Technology championship will be held at the San José McEnery Convention Center in downtown San José. The newly titled championship, formerly the Santa Clara Valley Science and Engineering Fair, is the longest running science fair in the country. Nearly 1,000 sixth through twelfth-grade students are registered in project categories across the physical and biological sciences as well as engineering and computing.

Judging preview (without students) is from 11:00 a.m. to 1:00 p.m., and official judging (with students) takes place from 1:00 p.m. to 5:00 p.m. The fair is open to the public from 5:00 p.m. to 7:30 p.m.

If you are available to serve on the NASA judging team, contact Tom Clausen at ext. 4-5544. Volunteers are also needed to assist with registration, check-in and other duties. If you are available to help on the 16th or 17th, sign up at: <http://www.science-fair.org/home.html>.

Winners from this regional effort will advance to the Intel International Science and Engineering Fair, to be held in San José May 6 – 11, 2001.

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When submitting stories or ads for publication, submit your material, along with any questions, in MS word by e-mail to: astrogram@mail.arc.nasa.gov on or before the deadline.

Deadline	Publication
Mon, Mar 5	Mon, Mar 12
Mon, Mar 19	Mon, Mar 26
Mon, Apr 2	Mon, Apr 9
Mon, Apr 16	Mon, Apr 23
Mon, Apr 30	Mon, May 7
Mon, May 14	Mon, May 21
Mon, May 28	Mon, Jun 4
Mon, Jun 11	Mon, Jun 18
Mon, Jun 25	Mon, Jul 2

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